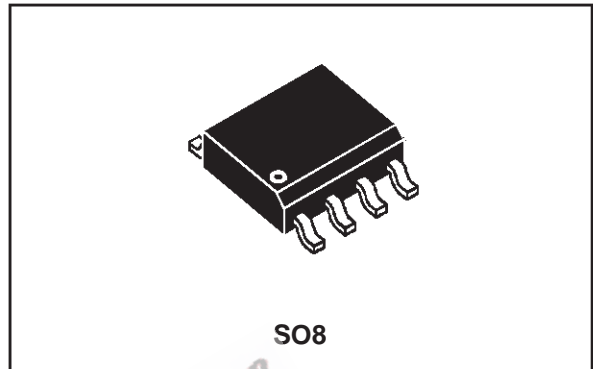


Application Specific Discretes  
A.S.D.™

DIODE ARRAY

**APPLICATION**

Protection of logic side of ISDN S-interface.  
Protection of I/O lines of microcontroller.  
Signal conditioning.



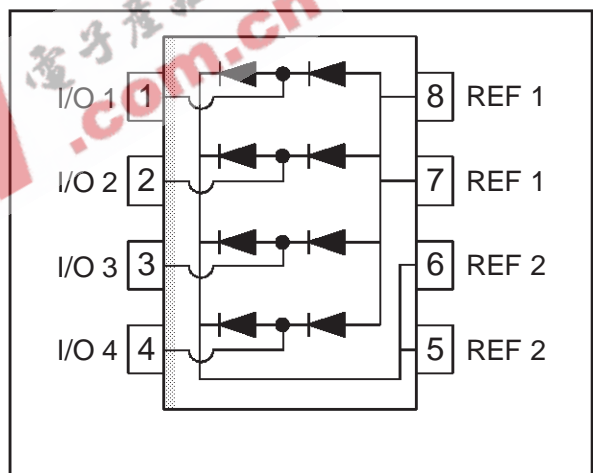
**FEATURES**

- ARRAY OF 8 OR 12 DIODES
- LOW INPUT CAPACITANCE
- SUITABLE FOR DIGITAL LINE PROTECTION

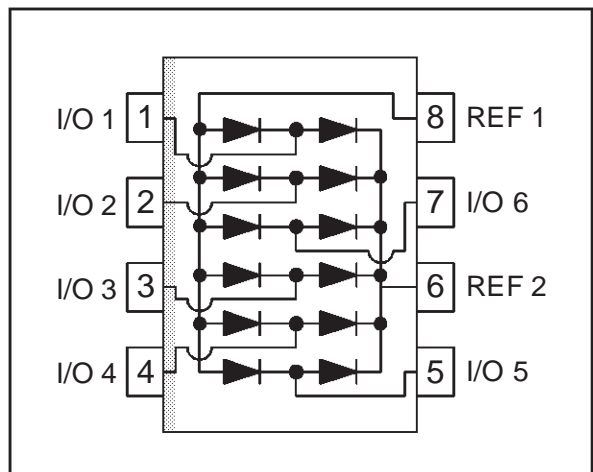
**DESCRIPTION**

ARRAY of 8 or 12 diodes configured by cells of 2 diodes, each cell being used to protect signal line from transient overvoltages by clamping action.

**FUNCTIONAL DIAGRAM : DA108S1**



**FUNCTIONAL DIAGRAM : DA112S1**



**COMPLIES WITH FOLLOWING STANDARDS :**

IEC1000-4-22 level 4: 15kV (air discharge)  
8kV (contact discharge)

## DA108S1 / DA112S1

### ABSOLUTE MAXIMUM RATINGS (T<sub>amb</sub> = 25°C)

Symbol	Parameter		Value	Unit
V <sub>RRM</sub>	Repetitive peak reverse voltage (for one single diode)		18	V
I <sub>PP</sub>	Repetitive peak forward current *	8/20 μs	12	A
P	Power dissipation		0.73	W
T <sub>stg</sub> T <sub>j</sub>	Storage temperature range Maximum operating junction temperature		- 55 to + 150 150	°C
T <sub>L</sub>	Maximum lead temperature for soldering during 10s.		260	°C

\* The surge is repeated after the device returns to ambient temperature

### THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
R <sub>th(j-a)</sub>	Junction to ambient		170	°C/W

### ELECTRICAL CHARACTERISTICS (T<sub>amb</sub> = 25°C)

Symbol	Parameter		Max.	Unit
V <sub>FP</sub>	Peak forward voltage	I <sub>PP</sub> = 12A, 8/20 μs DA108S1 DA112S1	9 12	V
V <sub>F</sub>	Forward voltage	I <sub>F</sub> = 50 mA	1.2	V
I <sub>R</sub>	Reverse leakage current	V <sub>R</sub> = 15V	2	μA

Fig.1 : Input capacitance

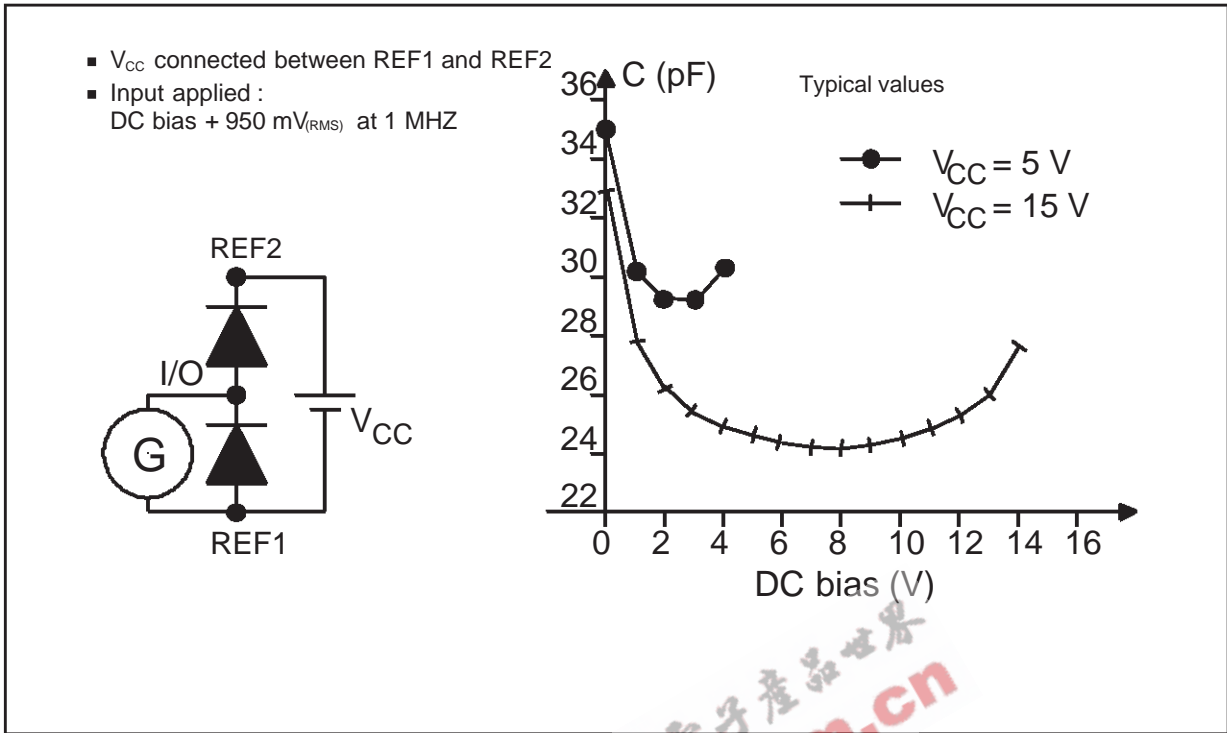
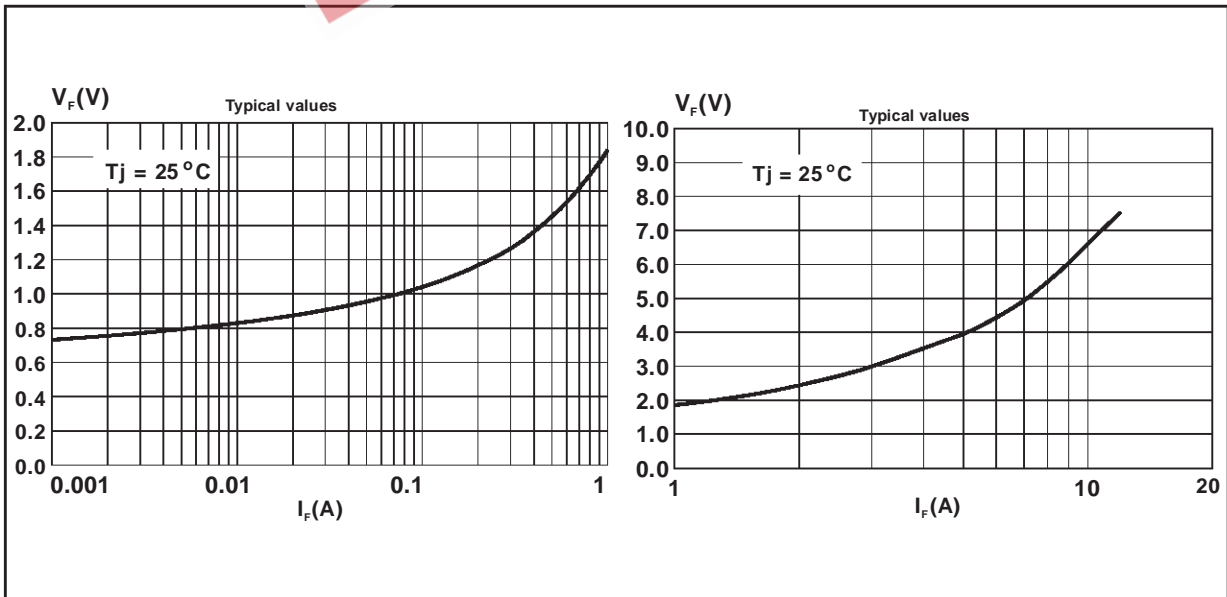


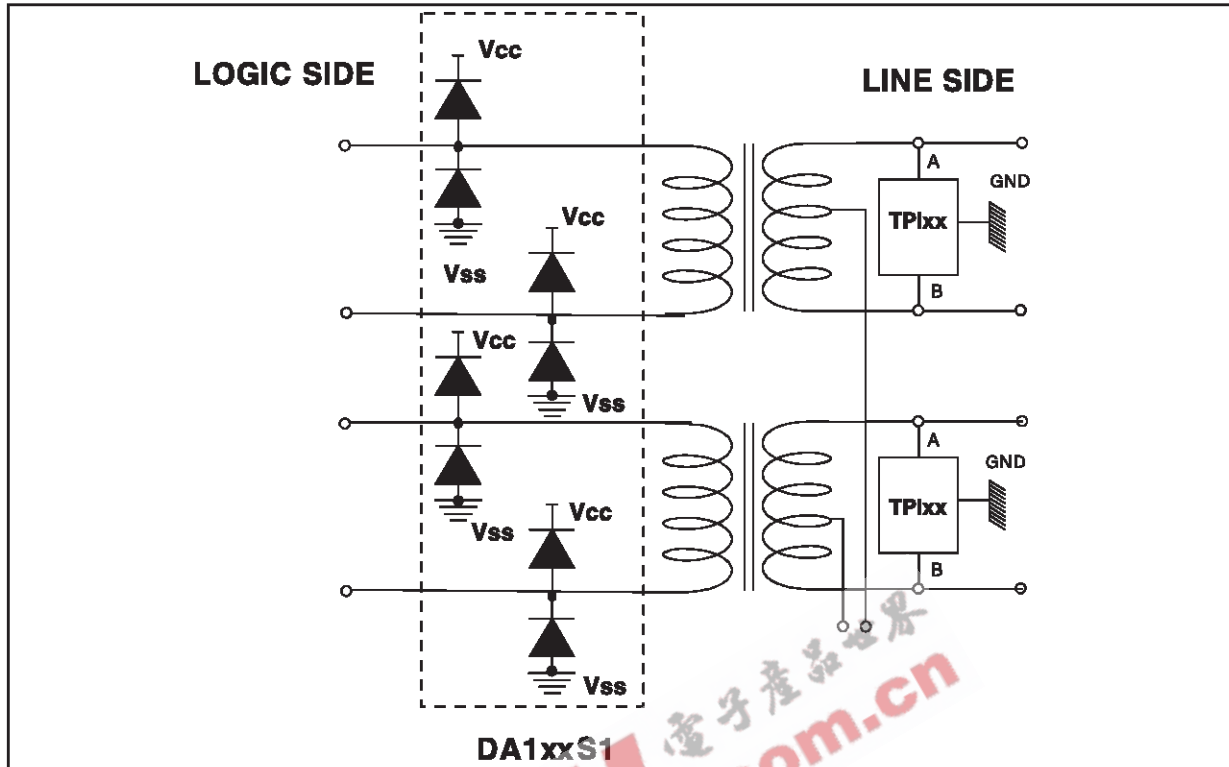
Fig.2 : Typical peak forward voltage characteristics (8/20 $\mu$ s pulse)



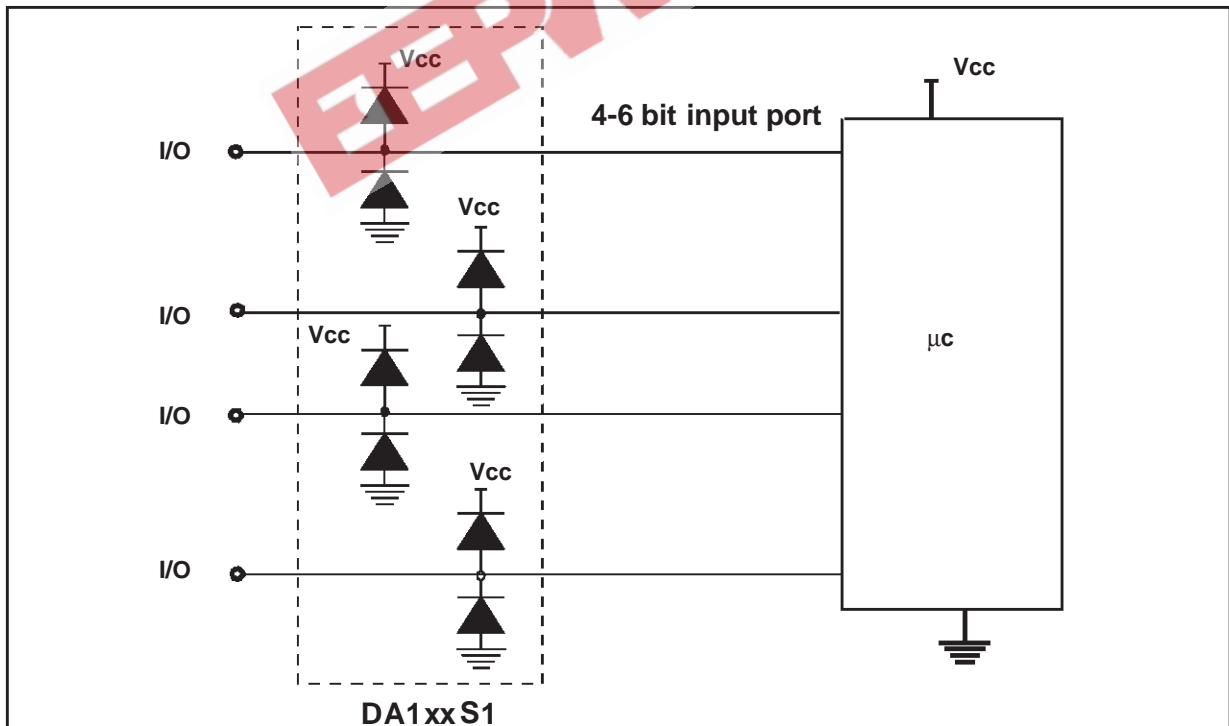
## DA108S1 / DA112S1

### APPLICATION 1 : ISDN Interface Protection

Residual lightning surges at transformer secondary are suppressed by DA108S1

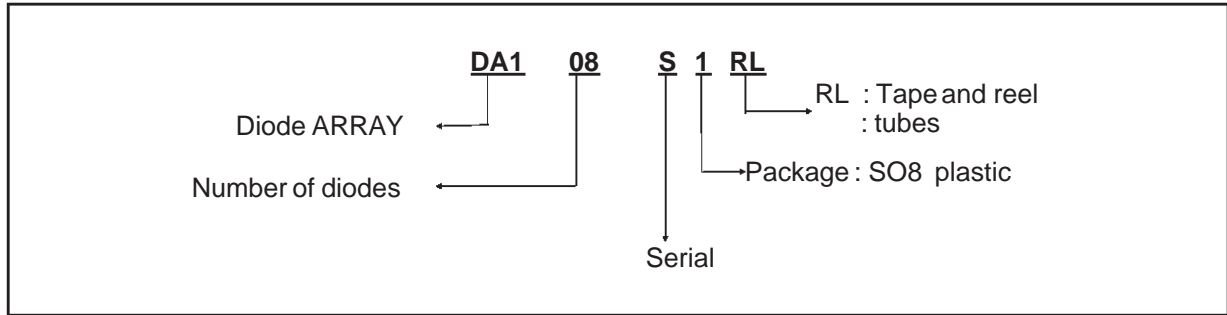


### APPLICATION 2 : Microcontroller I/O port protection



**IMPORTANT :** DA108S1 must imperatively be connected to the reference voltages by REF1 and REF2.

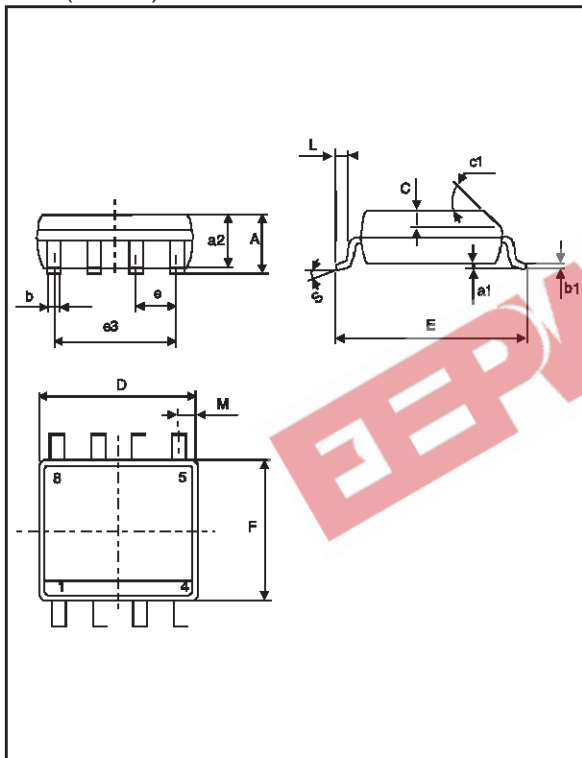
**ORDER CODE**



**MARKING** : Logo, Data Code,

DA108S1	DA108S
DA112S1	DA112S

**PACKAGE MECHANICAL DATA**  
SO8 (Plastic)



REF.	DIMENSIONS					
	Millimetres			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			1.75			0.069
a1	0.1		0.25	0.004		0.010
a2			1.65			0.065
b	0.35		0.48	0.014		0.019
b1	0.19		0.25	0.007		0.010
C		0.50			0.020	
c1	45° (typ)					
D	4.8		5.0	0.189		0.197
E	5.8		6.2	0.228		0.244
e		1.27			0.050	
e3		3.81			0.150	
F	3.8		4.0	0.15		0.157
L	0.4		1.27	0.016		0.050
M			0.6			0.024
S	8° (max)					

**Packaging** : Preference packaging is tape and reel.

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